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Huang et al.

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(54) **COMPOSITE BEAM GENERATOR AND
POWDER MELTING OR SINTERING
METHOD USING THE SAME**

(58) **Field of Classification Search**

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26/342; B23K 26/0648; B29C 67/0077;
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(57) **ABSTRACT**

This disclosure provides a composite beam generator and a method of performing powder melting or sintering in additive manufacturing process using the same. The composite beam generator comprises: a beam splitter for splitting a beam into a first directed beam and a second directed beam; a beam shaper for shaping a transverse energy distribution profile of the second directed beam to non-circular; at least one beam delivery unit for guiding the first directed beam or the second directed beam; and a beam combiner for receiving the first directed beam and the second directed beam, and respectively generating a first output beam and a second output beam, and combining them into the composite beam.

27 Claims, 6 Drawing Sheets

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